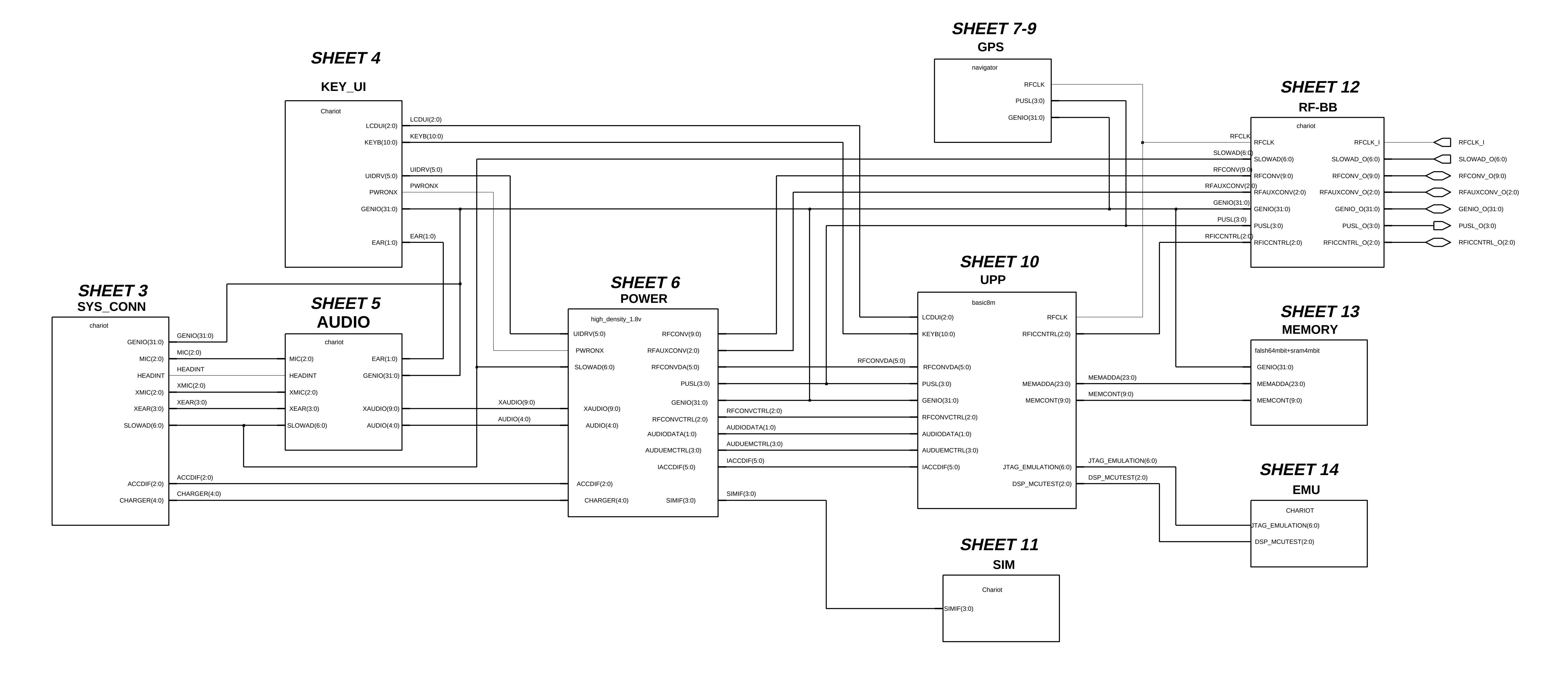
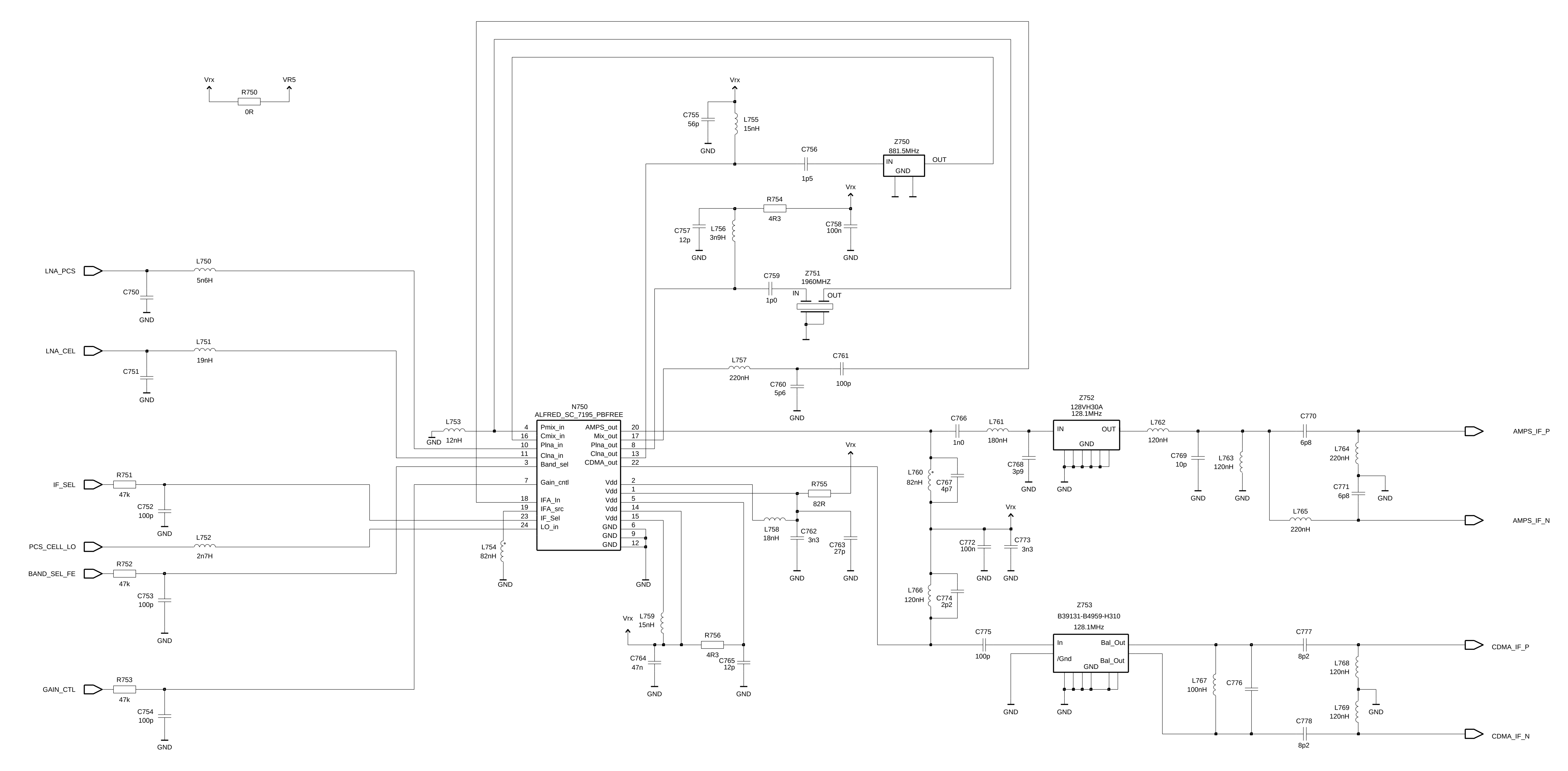
6015i/6016i Schematics

Baseband - Top



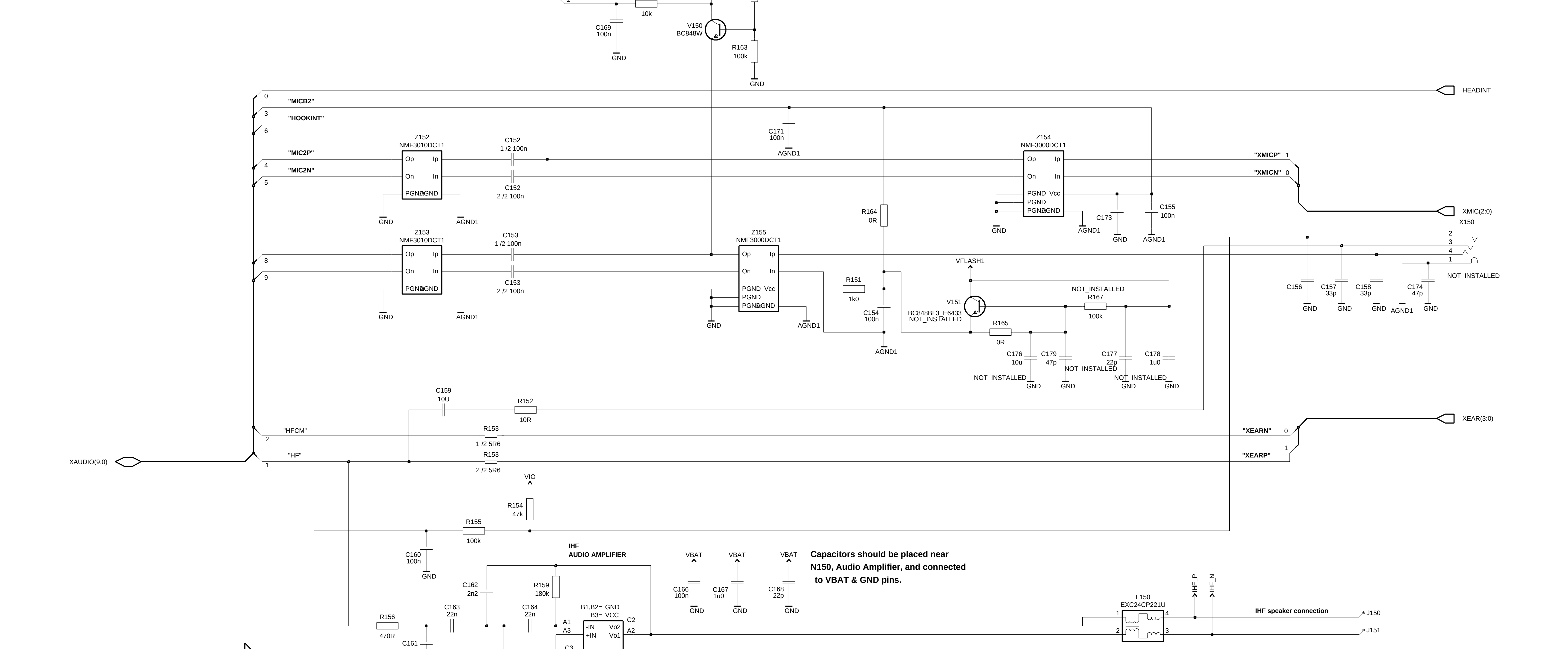
Front End



	LOGIC INPUTS		
MODES	BAND	GAIN_CTL	IF_SEL
CEL CDMA Hi Gain	0	1	0
CEL CDMA Lo Gain	0	0	0
PCS CDMA Hi Gain	1	1	0
PCS CDMA Lo Gain	1	0	0
AMPS Hi Gain	0	1	1
AMPS Lo Gain	0	0	1

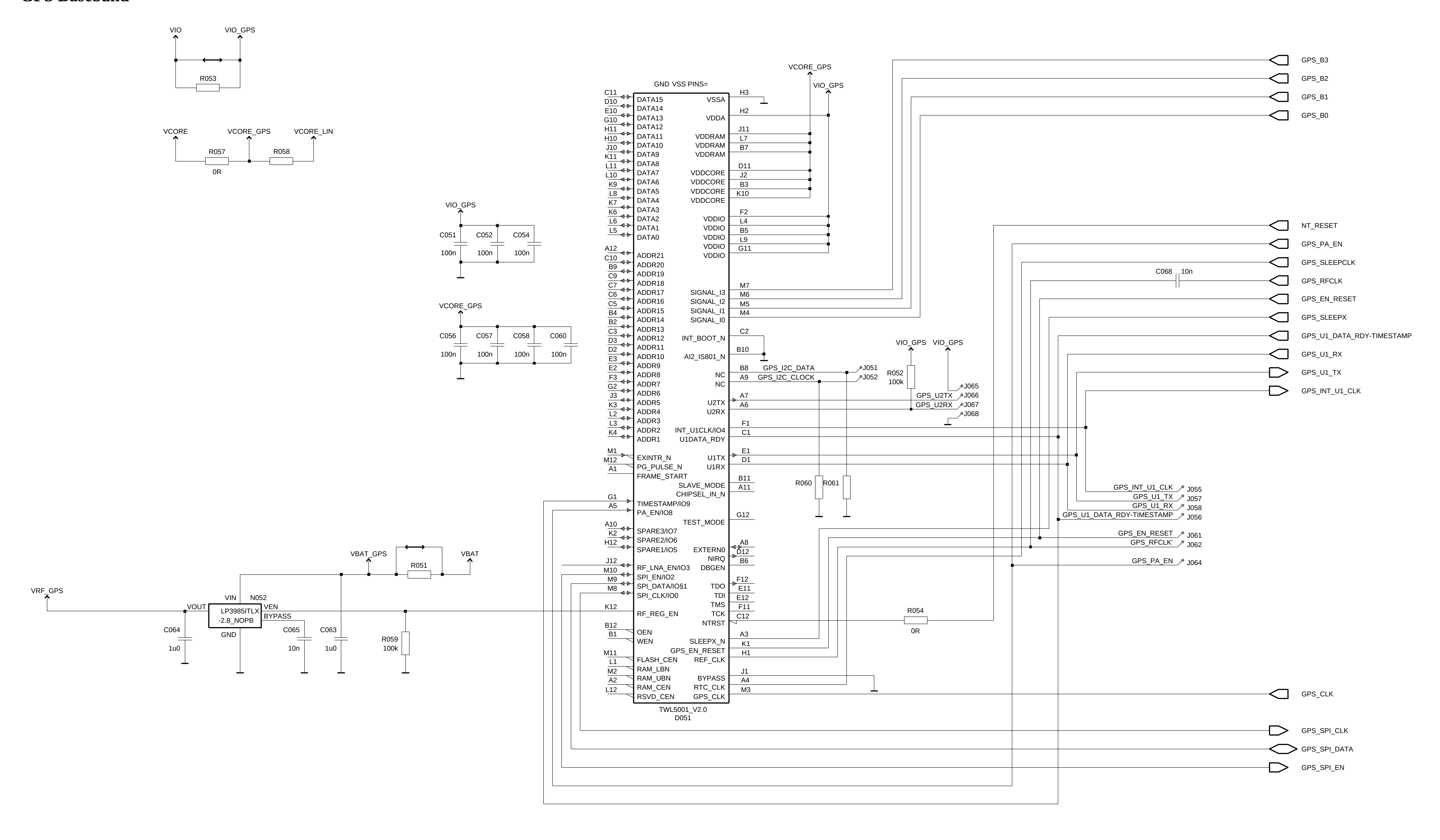
VARIANT DNI	
HDB91 800	HDC93 1900
C750 C759 L750 Z751	C751 C756 C766 C768 C769 C770 C771 L751 L761 L762 L763 L764 L765 Z750 Z752

Audio

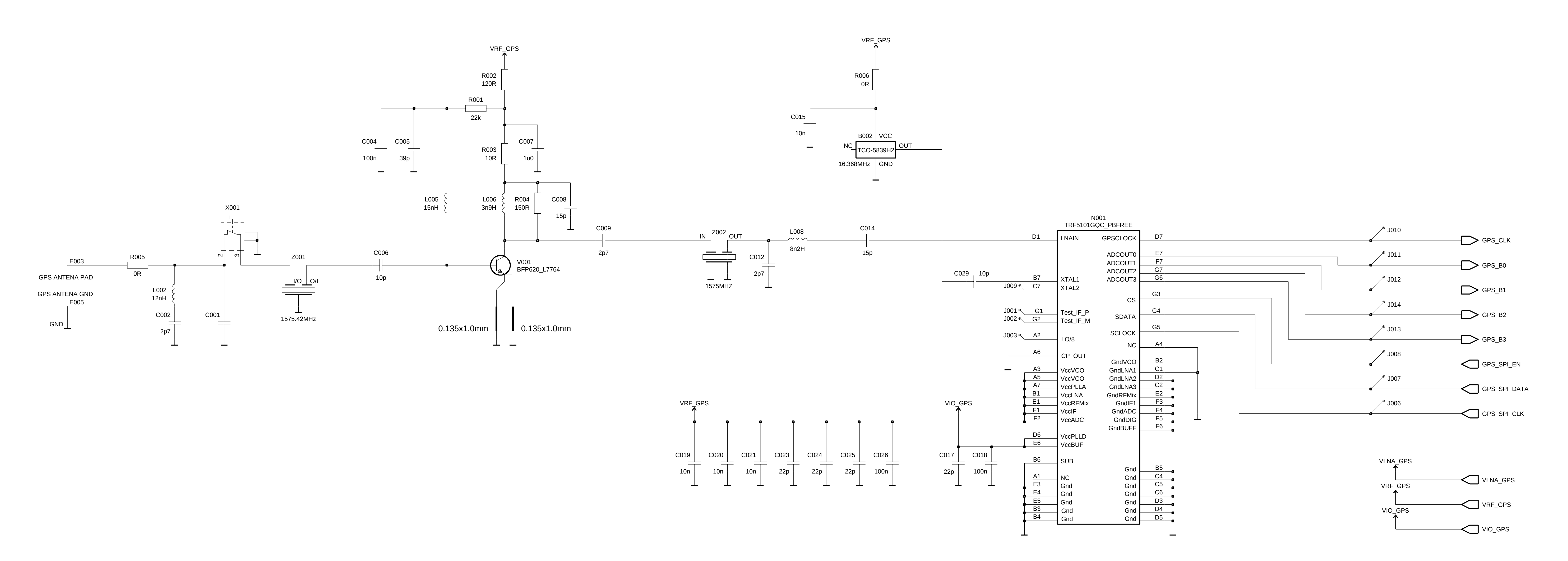


EAR(1:0)
MIC(2:0)
AUDIO(4:0)
SLOWAD(6:0)
HEADINT
XMIC(2:0)
X150
XEAR(3:0)
XAUDIO(9:0)
GENIO(31:0)
"EARP"
"EARN"
"MICB1"
"MIC1P"
"MIC1N"
"MICB2"
"HOOKINT"
"MIC2P"
"MIC2N"
"XMICP"
"XMICN"
"HFCM"
"HF"
"XEARN"
"XEARP"
Z150 NMF3010DCT1
Z151 NMF3000DCT1
Z152 NMF3010DCT1
Z153 NMF3010DCT1
Z154 NMF3000DCT1
Z155 NMF3000DCT1
V150 BC848W
V151 BC848BL3_E6433 NOT_INSTALLED
IHF AUDIO AMPLIFIER
LM4890ITLXNOPB N150
Capacitors should be placed near N150, Audio Amplifier, and connected to VBAT & GND pins.
L150 EXC24CP221U
IHF speaker connection
J150
J151
IHF_P
IHF_N
VFLASH1
VIO
VBAT
GND
AGND1
NOT_INSTALLED

GPS Baseband

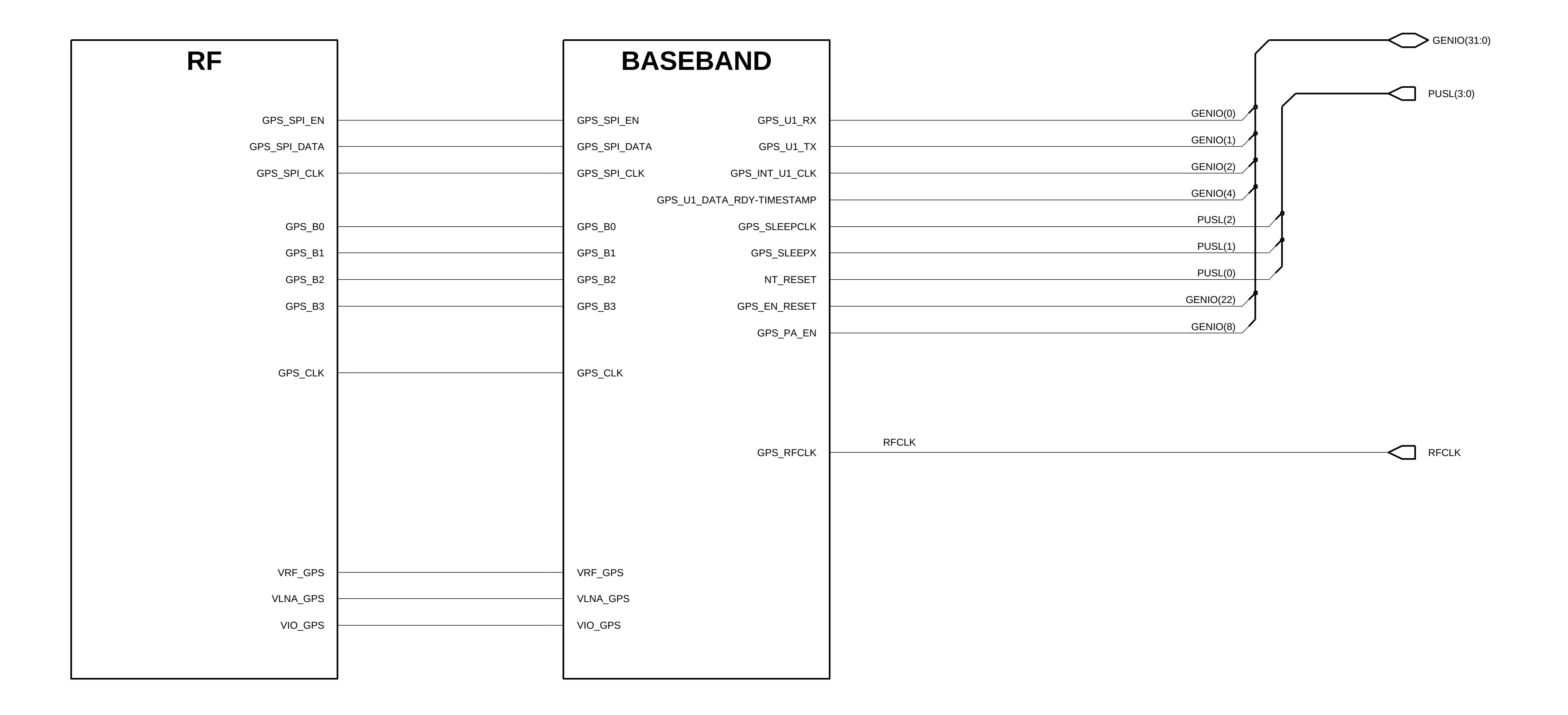


GPS RF

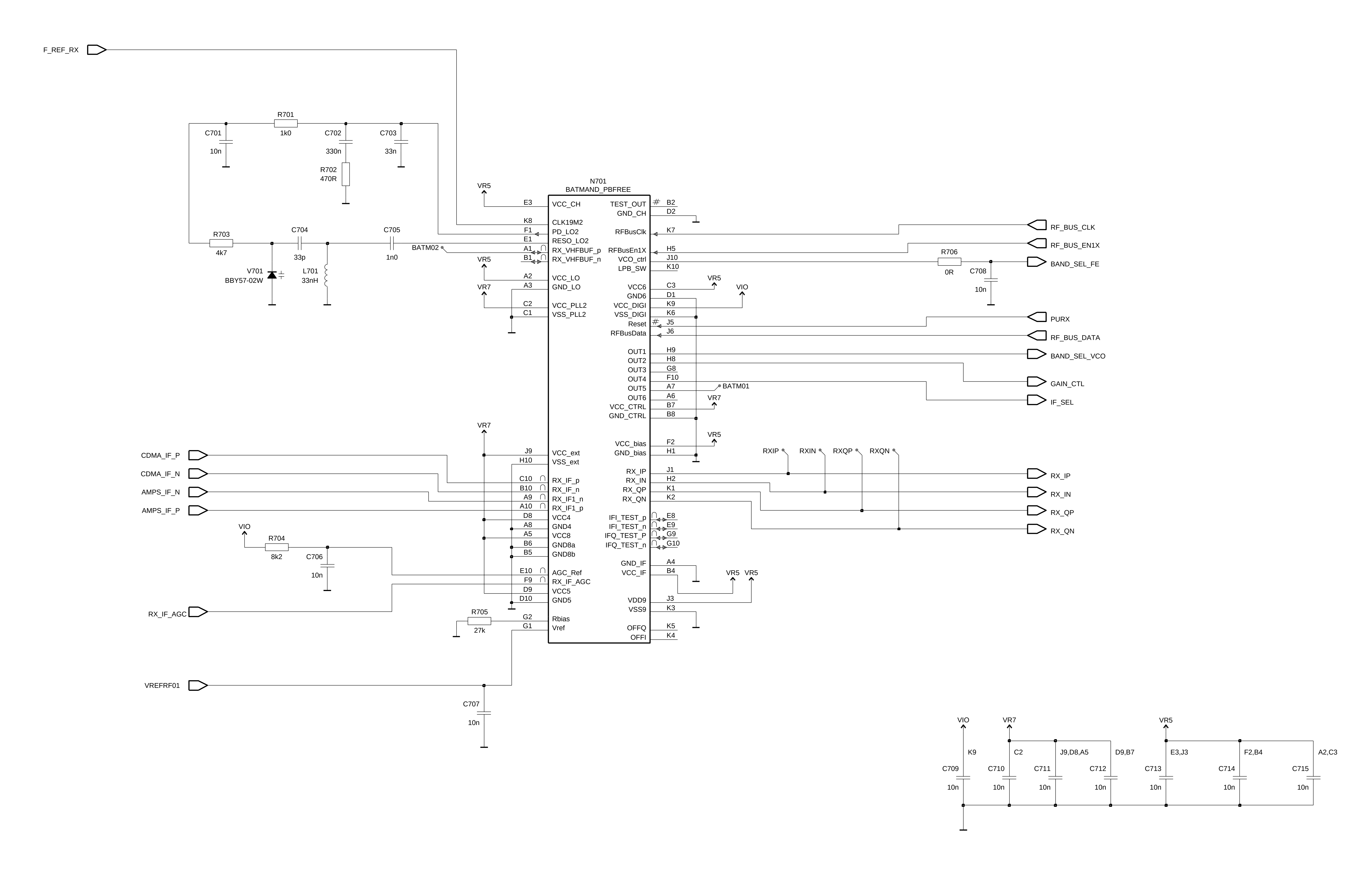


VRF_GPS
R002 120R
R001 22k
C004 100n
C005 39p
R003 10R
C007 1u0
L005 15nH
L006 3n9H
R004 150R
C008 15p
X001
E003
GPS ANTENA PAD
GPS ANTENA GND
E005
GND
R005 0R
L002 12nH
C002 2p7
C001
Z001
I/O O/I
1575.42MHz
C006 10p
V001 BFP620_L7764
0.135x1.0mm
C009 2p7
Z002 IN OUT
1575MHZ
C012 2p7
L008 8n2H
C014 15p
R006 0R
C015 10n
B002 VCC
NC TCO-5839H2 OUT
16.368MHz GND
C029 10p
N001 TRF5101GQC_PBFREE
LNAIN GPSCLOCK
ADCOUT0 ADCOUT1 ADCOUT2 ADCOUT3
XTAL1 XTAL2
CS SDATA SCLOCK NC
Test_IF_P Test_IF_M
LO/8 CP_OUT
GndVCO GndLNA1 GndLNA2 GndLNA3 GndRFMix GndIF1 GndADC GndDIG GndBUFF
VccVCO VccVCO VccPLLA VccLNA VccRFMix VccIF VccADC VccPLLD VccBUF
SUB
J001 J002 J003 J009
J010 J011 J012 J014 J013 J008 J007 J006
GPS_CLK GPS_B0 GPS_B1 GPS_B2 GPS_B3 GPS_SPI_EN GPS_SPI_DATA GPS_SPI_CLK
VIO_GPS
C019 10n C020 10n C021 10n C023 22p C024 22p C025 22p C026 100n
C017 22p C018 100n
VLNA_GPS VRF_GPS VIO_GPS

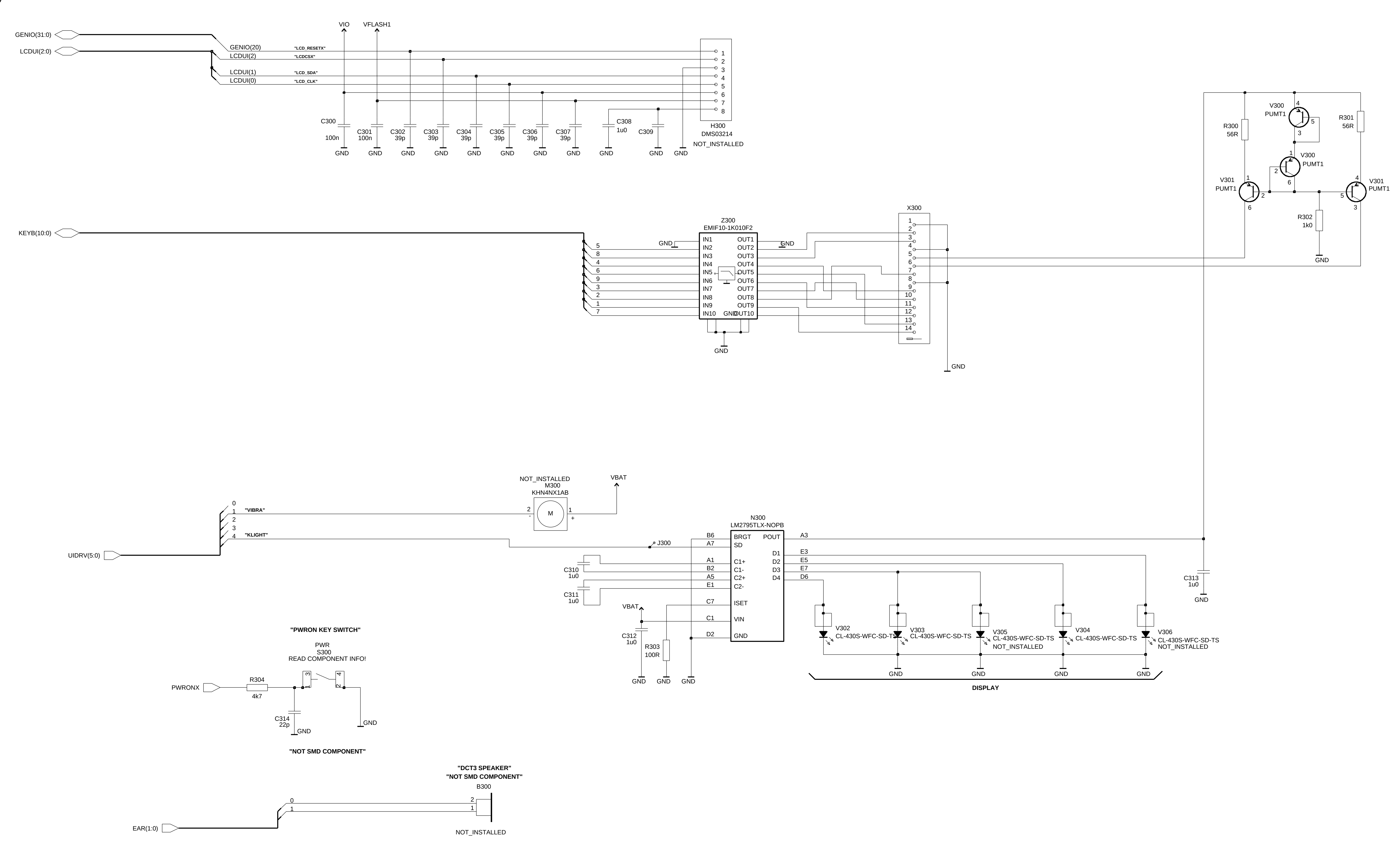
GPS RF BB Interface



Batman

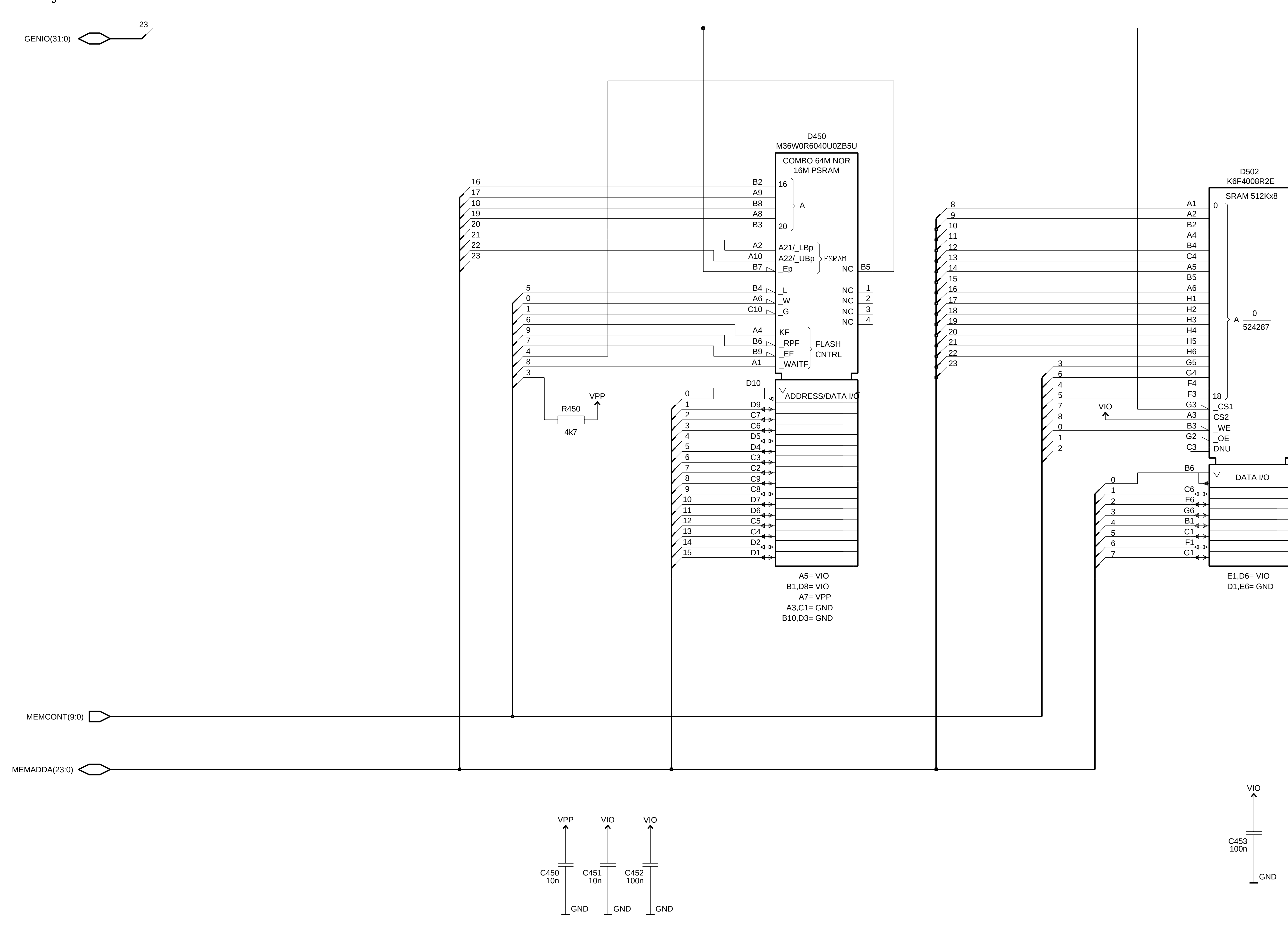

F_REF_RX
R701
1k0
C701
10n
C702
330n
C703
33n
R702
470R
N701
BATMAND_PBFREE
VR5
R703
4k7
C704
33p
C705
1n0
V701
BBY57-02W
L701
33nH
BATM02
VCC_CH
CLK19M2
PD_LO2
RESO_LO2
RX_VHFBUF_p
RX_VHFBUF_n
VCC_LO
GND_LO
VCC_PLL2
VSS_PLL2
TEST_OUT
GND_CH
RFBusClk
RFBusEn1X
VCO_ctrl
LPB_SW
VCC6
GND6
VCC_DIGI
VSS_DIGI
Reset
RFBusData
OUT1
OUT2
OUT3
OUT4
OUT5
OUT6
VCC_CTRL
GND_CTRL
VCC_bias
GND_bias
RX_IP
RX_IN
RX_QP
RX_QN
IFI_TEST_p
IFI_TEST_n
IFQ_TEST_P
IFQ_TEST_n
GND_IF
VCC_IF
VDD9
VSS9
OFFQ
OFFI
RF_BUS_CLK
RF_BUS_EN1X
R706
0R
C708
10n
BAND_SEL_FE
VIO
VR7
PURX
RF_BUS_DATA
BAND_SEL_VCO
GAIN_CTL
IF_SEL
BATM01
RXIP RXIN RXQP RXQN
RX_IP
RX_IN
RX_QP
RX_QN
CDMA_IF_P
CDMA_IF_N
AMPS_IF_N
AMPS_IF_P
VCC_ext
VSS_ext
RX_IF_p
RX_IF_n
RX_IF1_n
RX_IF1_p
VCC4
GND4
VCC8
GND8a
GND8b
AGC_Ref
RX_IF_AGC
VCC5
GND5
Rbias
Vref
R704
8k2
C706
10n
RX_IF_AGC
R705
27k
VREFRF01
C707
10n
C709 C710 C711 C712 C713 C714 C715
10n
K9 C2 J9,D8,A5 D9,B7 E3,J3 F2,B4 A2,C3

Key UI

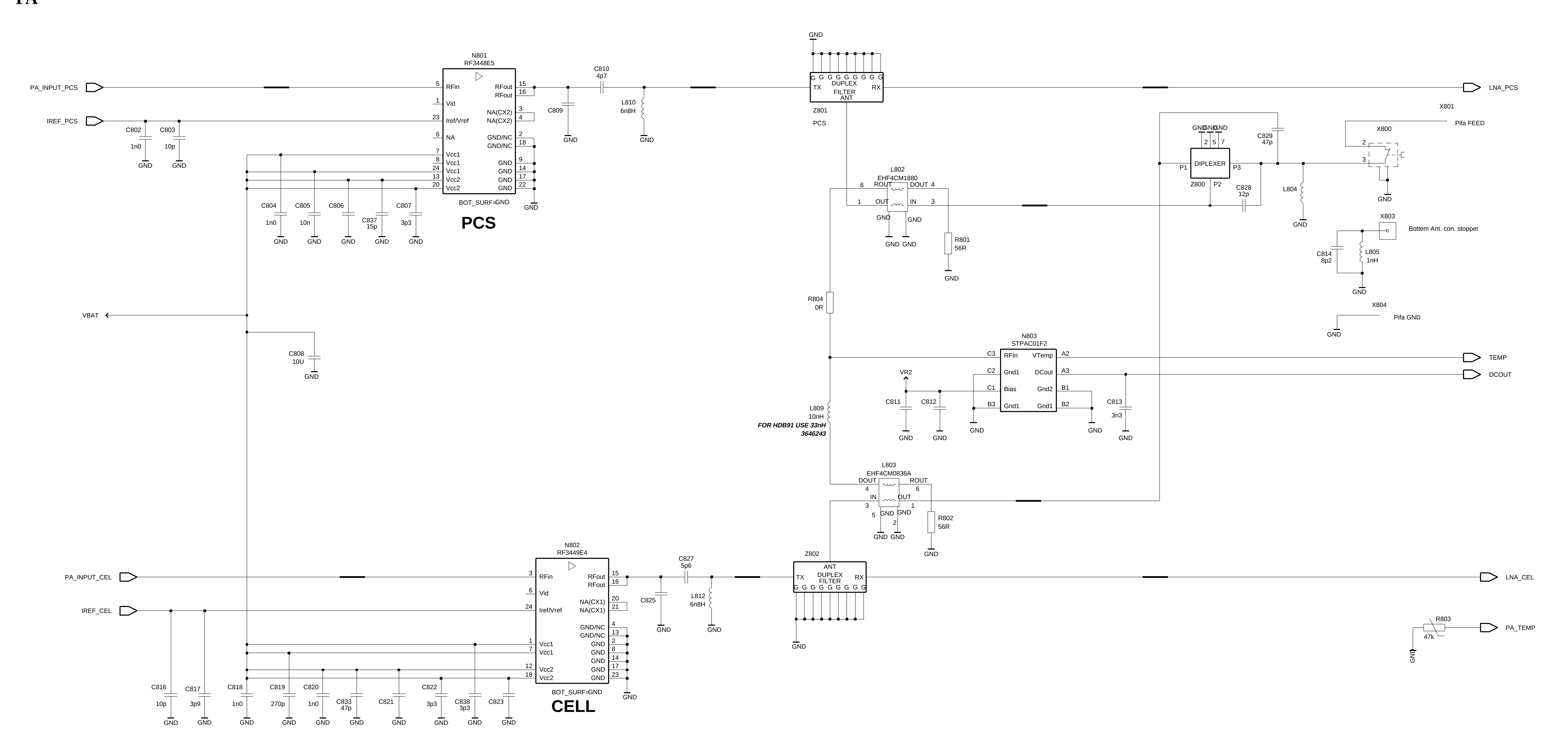


GENIO(31:0)
LCDUI(2:0)
KEYB(10:0)
UIDRV(5:0)
PWRONX
EAR(1:0)
VIO
VFLASH1
"LCD_RESETX"
"LCDCSX"
"LCD_SDA"
"LCD_CLK"
H300
DMS03214
NOT_INSTALLED
Z300
EMIF10-1K010F2
X300
N300
LM2795TLX-NOPB
M300
KHN4NX1AB
VBAT
"VIBRA"
"KLIGHT"
J300
"PWRON KEY SWITCH"
PWR
S300
READ COMPONENT INFO!
R304
4k7
C314
22p
"NOT SMD COMPONENT"
"DCT3 SPEAKER"
B300
V300
PUMT1
V301
R300
56R
R301
R302
1k0
R303
100R
C313
1u0
V302
V303
V304
V305
V306
CL-430S-WFC-SD-TS
DISPLAY
GND

Memory


GENIO(31:0)
D450
M36W0R6040U0ZB5U
COMBO 64M NOR
16M PSRAM
A21/_LBp
A22/_UBp
PSRAM
_Ep
_L
_W
_G
KF
_RPF
_EF
_WAITF
FLASH
CNTRL
ADDRESS/DATA I/O
R450
4k7
VPP
A5= VIO
B1,D8= VIO
A7= VPP
A3,C1= GND
B10,D3= GND
D502
K6F4008R2E
SRAM 512Kx8
524287
_CS1
CS2
_WE
_OE
DNU
DATA I/O
VIO
E1,D6= VIO
D1,E6= GND
MEMCONT(9:0)
MEMADDA(23:0)
C450
10n
C451
10n
C452
100n
C453
100n
GND

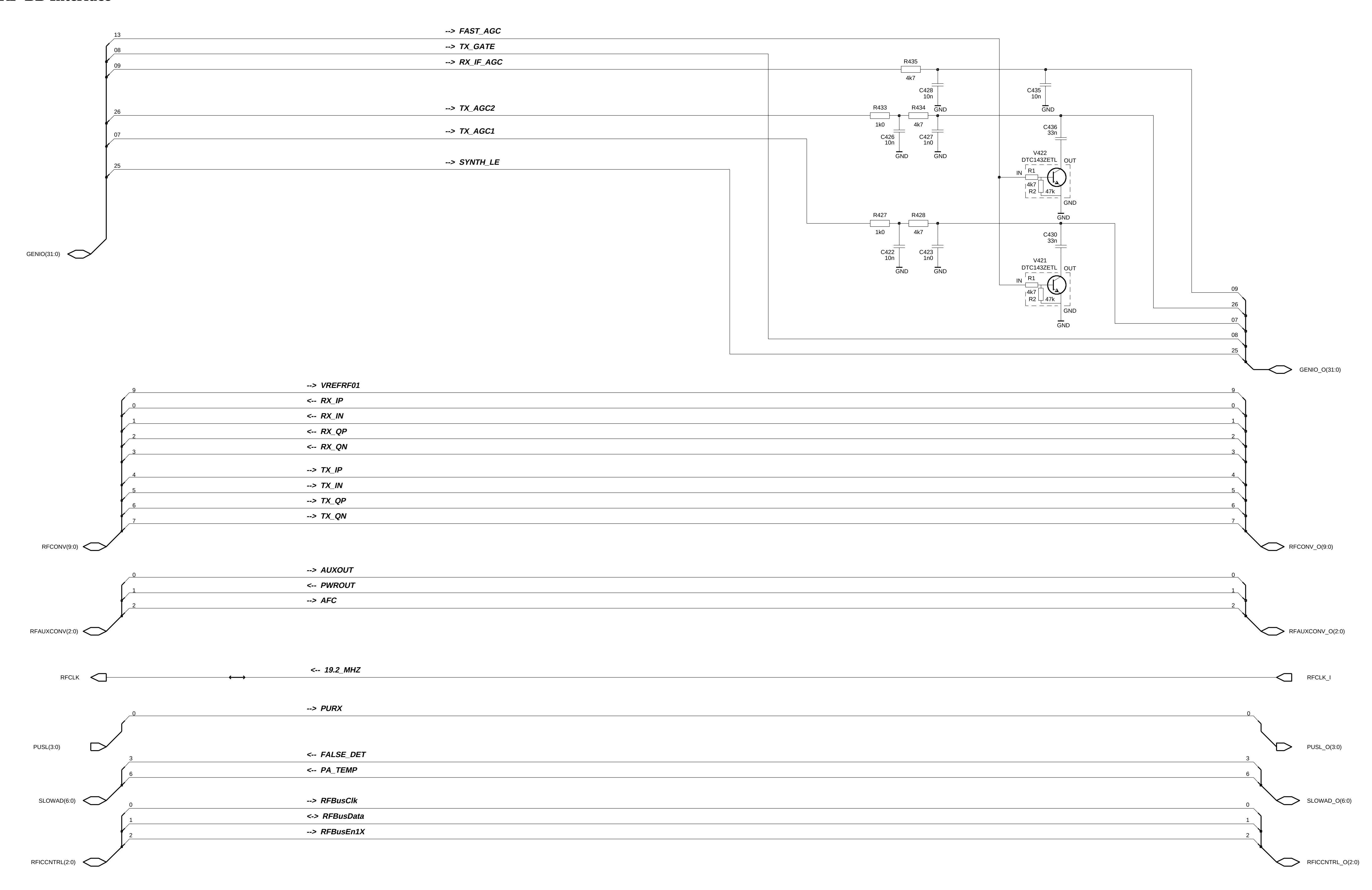
PA



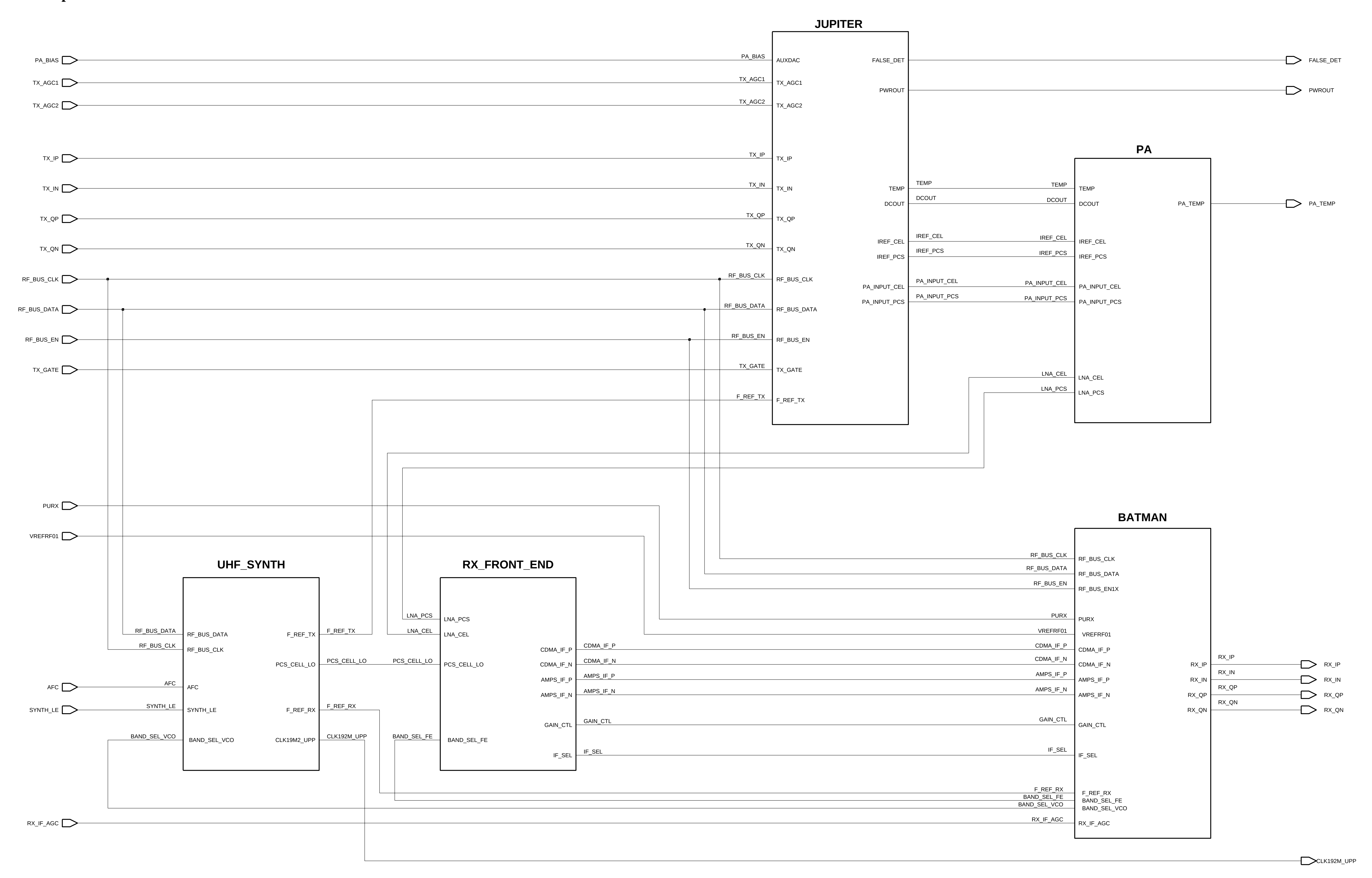
VARIANT DNI

HDC91 DB	HDB91 800	HDC93 1900
C828	C802	C816
C829	C803	C817
	C804	C818
	C805	C819
	C806	C820
	C807	C821
	C809	C822
	C810	C823
	C828	C825
	C837	C827
	L802	C829
	L810	C833
	N801	C838
	R801	L803
	R804	L808
	Z800	L811
	Z801	R802
		Z800
		Z802

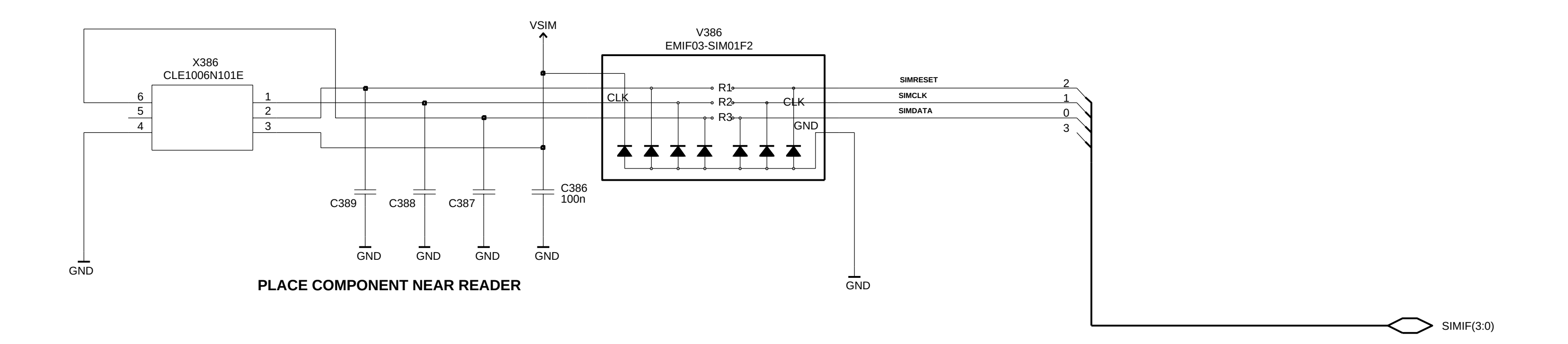
RF-BB Interface



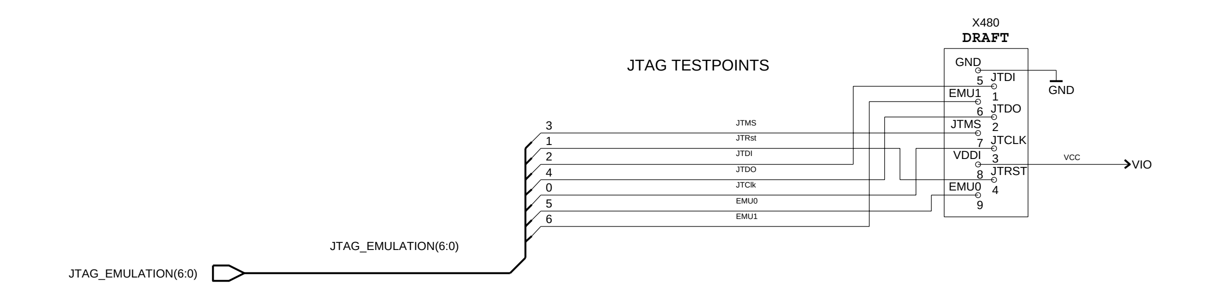
RF - Top


JUPITER
PA
BATMAN
UHF_SYNTH
RX_FRONT_END
PA_BIAS
TX_AGC1
TX_AGC2
TX_IP
TX_IN
TX_QP
TX_QN
RF_BUS_CLK
RF_BUS_DATA
RF_BUS_EN
TX_GATE
F_REF_TX
AUXDAC
FALSE_DET
PWROUT
TEMP
DCOUT
IREF_CEL
IREF_PCS
PA_INPUT_CEL
PA_INPUT_PCS
PA_TEMP
LNA_CEL
LNA_PCS
PURX
VREFRF01
RF_BUS_EN1X
CDMA_IF_P
CDMA_IF_N
AMPS_IF_P
AMPS_IF_N
GAIN_CTL
IF_SEL
F_REF_RX
BAND_SEL_FE
BAND_SEL_VCO
RX_IF_AGC
RX_IP
RX_IN
RX_QP
RX_QN
PCS_CELL_LO
AFC
SYNTH_LE
CLK19M2_UPP
CLK192M_UPP

SIM



Test and Emulator Interface





System Connector

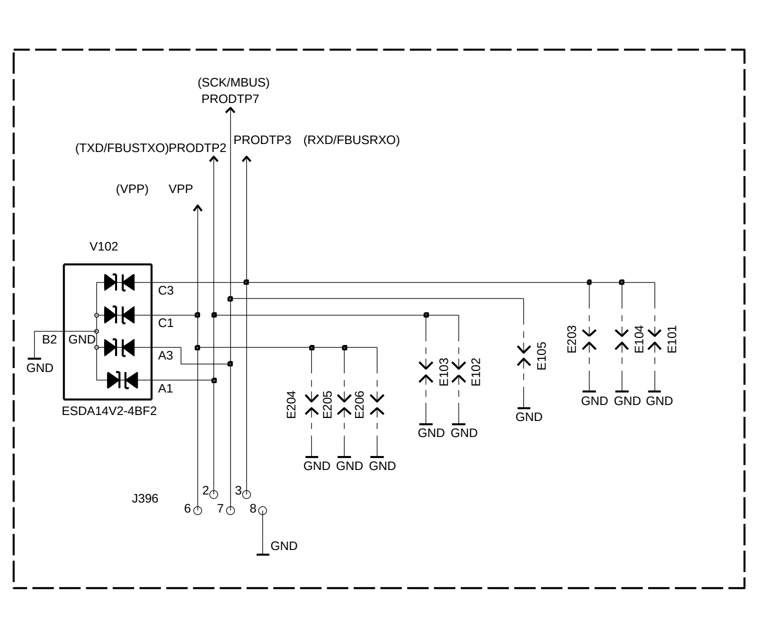
TEST POINTS FOR BATTERY

TOMAHAWK BOTTOM CONNECTOR

Tomahawk Charger connector

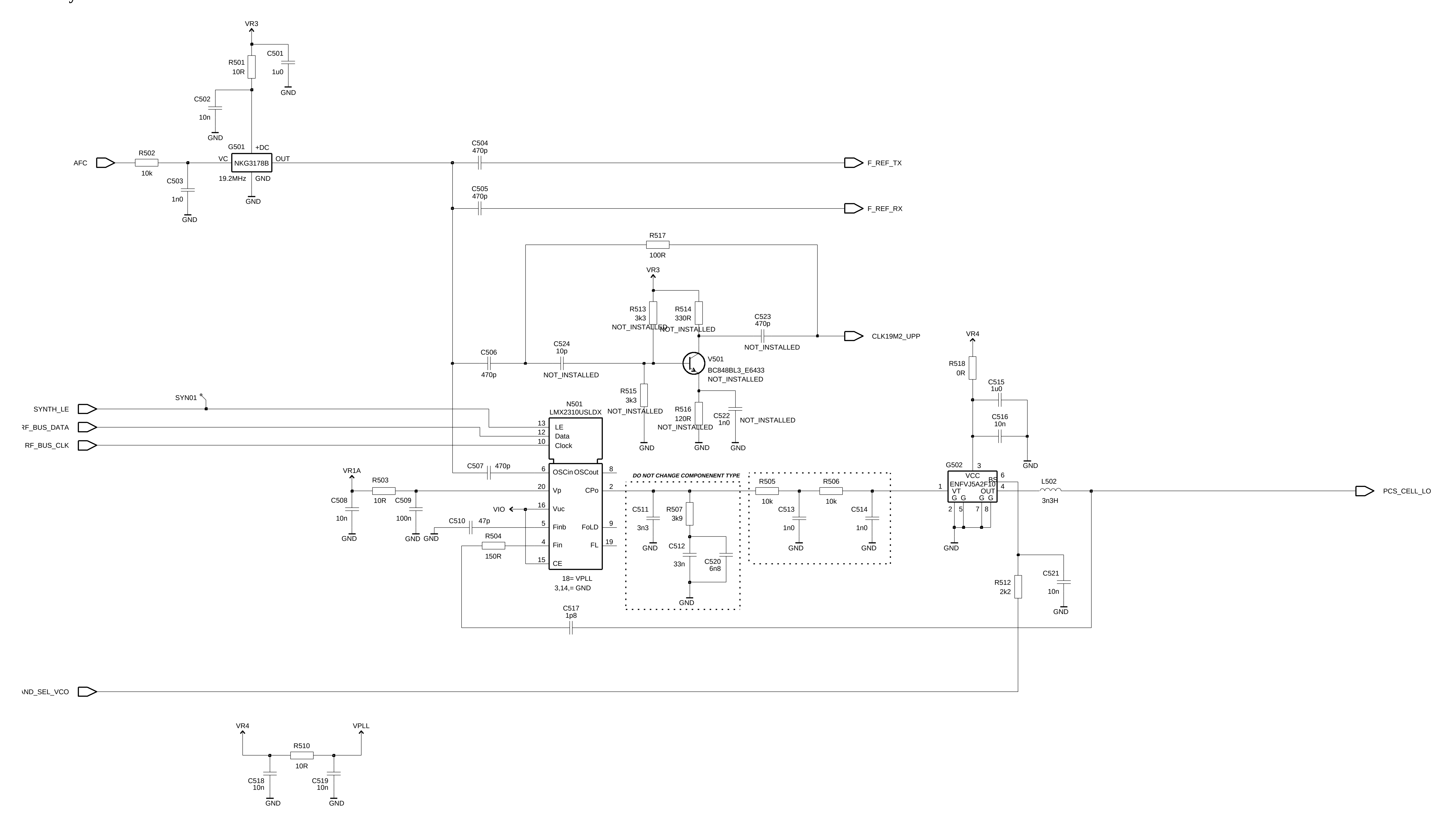
Tomahawk System connector

Microphone contacts



PROD TEST PATTERN

UHF Synthesizer



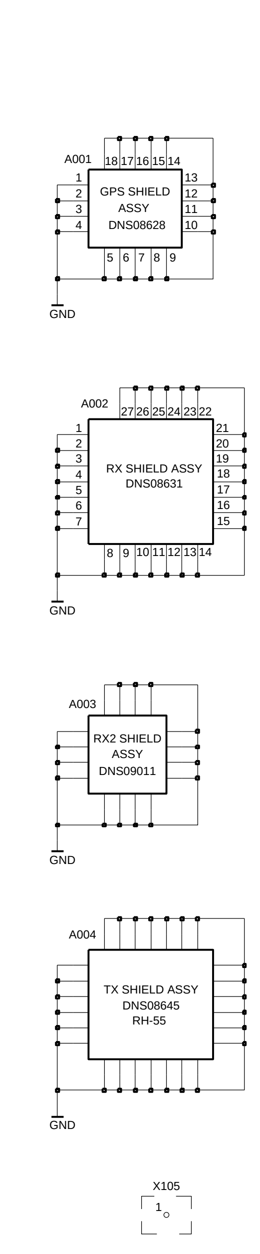
Top Level

RF

SYS

GENIO_O(31:0) GENIO_O(31:0)
RFCLK_I RFCLK_I
RFCONV_O(9:0) RFCONV_O(9:0)
SLOWAD_O(6:0) SLOWAD_O(6:0)
PUSL_O(3:0)
RFAUXCONV_O(2:0) RFAUXCONV_O(2:0)
RFICCNTRL_O(2:0) RFICCNTRL_O(2:0)

07 TX_AGC1 --> TX_AGC1 TX_AGC1
26 TX_AGC2 --> TX_AGC2 TX_AGC2
09 RF_IF_AGC RF_IF_AGC RX_IF_AGC
25 SYNTH_LE --> SYNTH_LE SYNTH_LE
08 TX_GATE --> TX_GATE TX_GATE
RF_CLK192M_UPP_RF <-- RF_CLK192M_UPP_RF CLK192M_UPP
9 VREFRF01 --> VREFRF01 VREFRF01
0 RX_IP_RF <-- RX_IP_RF RX_IP
1 RX_IN_RF <-- RX_IN_RF RX_IN
2 RX_QP_RF <-- RX_QP_RF RX_QP
3 RX_QN_RF <-- RX_QN_RF RX_QN
4 TX_IP_RF --> TX_IP_RF TX_IP
5 TX_IN_RF --> TX_IN_RF TX_IN
6 TX_QP_RF --> TX_QP_RF TX_QP
7 TX_QN_RF --> TX_QN_RF TX_QN
3 FALSE_DET <-- FALSE_DET FALSE_DET
6 PA_TEMP <-- PA_TEMP PA_TEMP
0 PURX --> PURX PURX
0 AUXDAC --> AUXDAC PA_BIAS
1 PWROUT <-- PWROUT PWROUT
2 AFC --> AFC AFC
0 RF_BUS_CLK --> RF_BUS_CLK RF_BUS_CLK
1 RF_BUS_DATA <-> RF_BUS_DATA RF_BUS_DATA
2 RF_BUS_EN --> RF_BUS_EN RF_BUS_EN

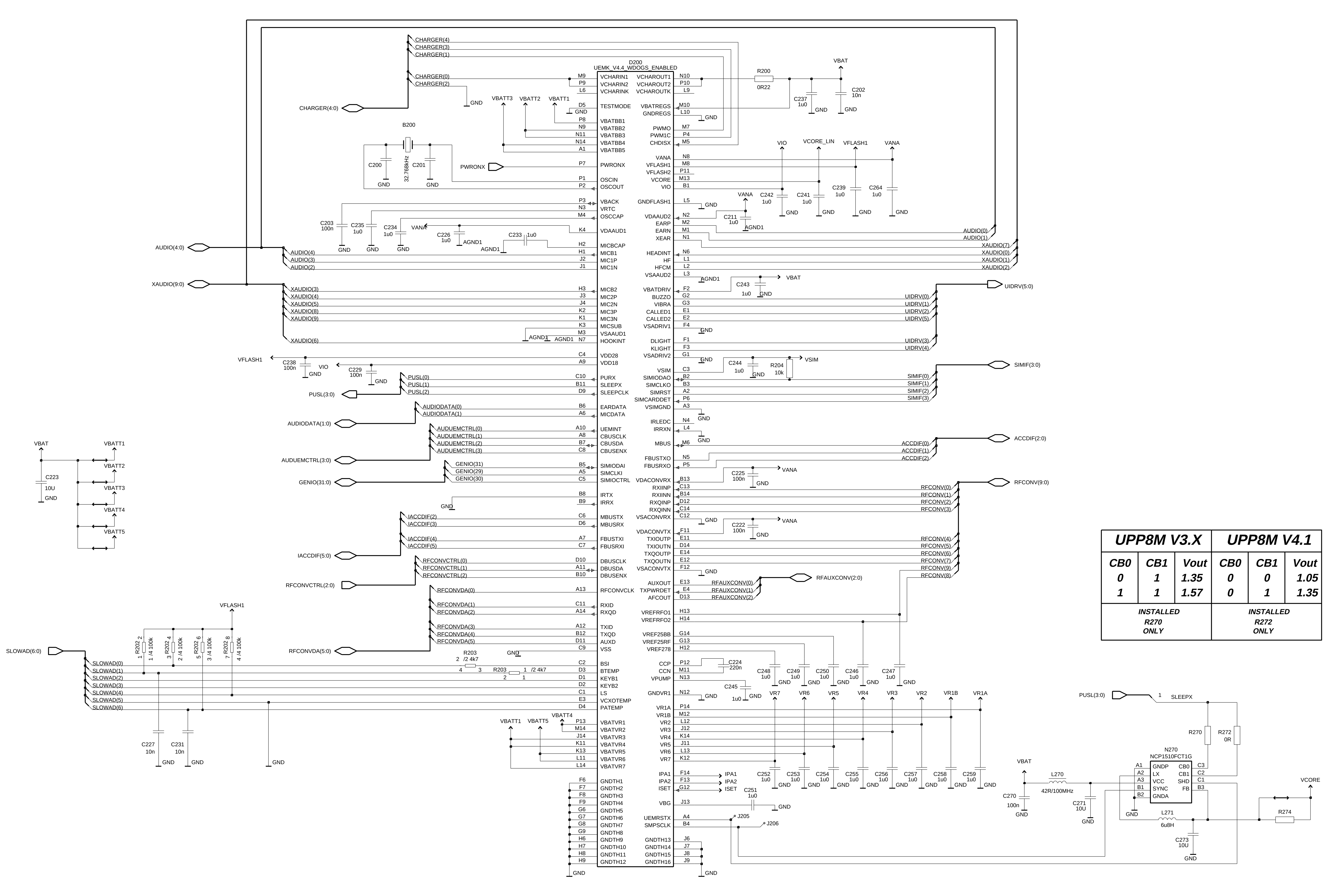


0.9mm
E107 E108 E109 E110 E111 E112
GND

Mechanical Plated Thru Holes

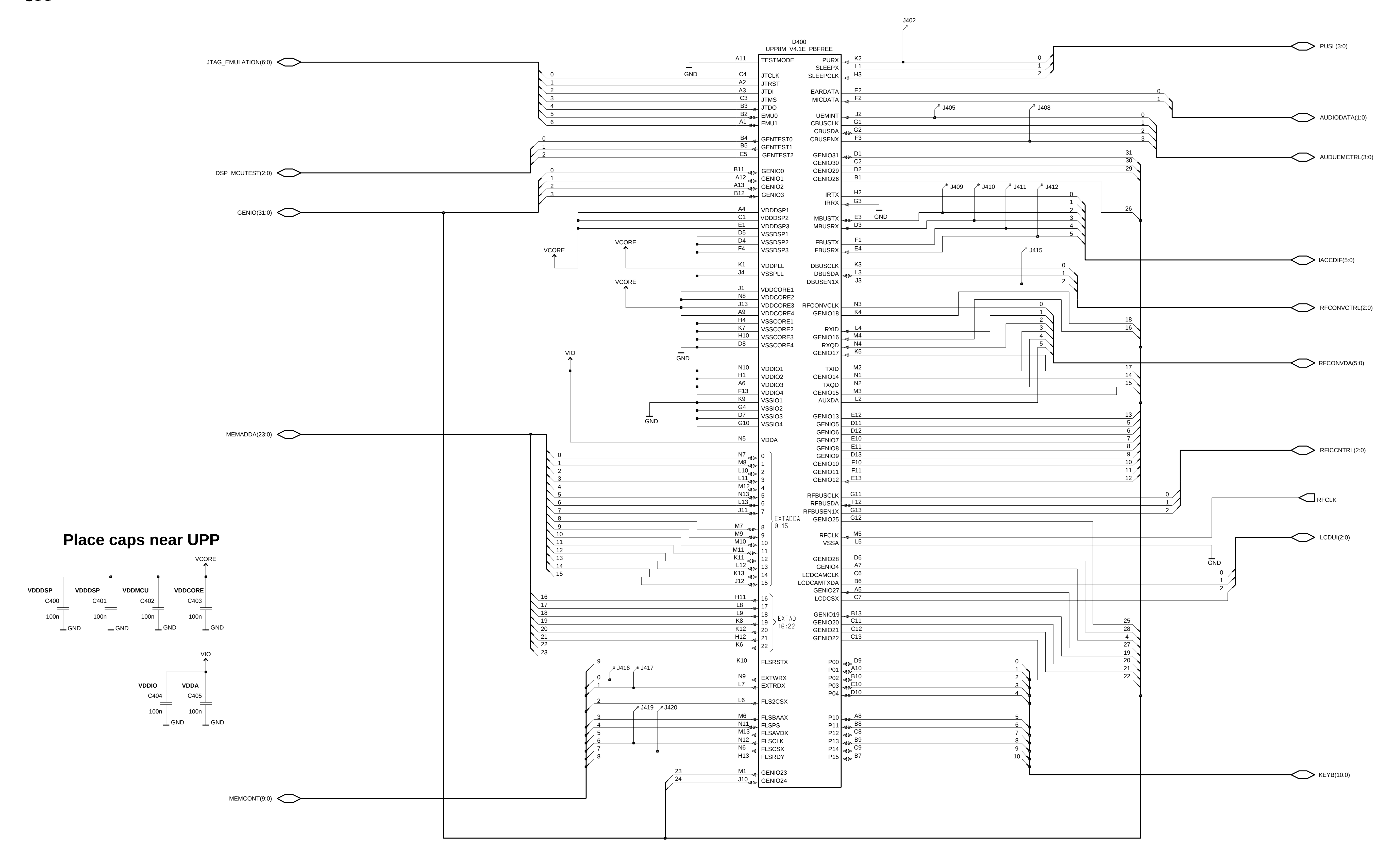
5.0mm half HOLE E1 E2 GND
2.1mm half HOLE E3 E4 GND
2.3mm HOLE E5 E6 GND
E8, E9 are 2.0mm HOLE for alignment E8 E9 GND
AGND AGND1

UEM

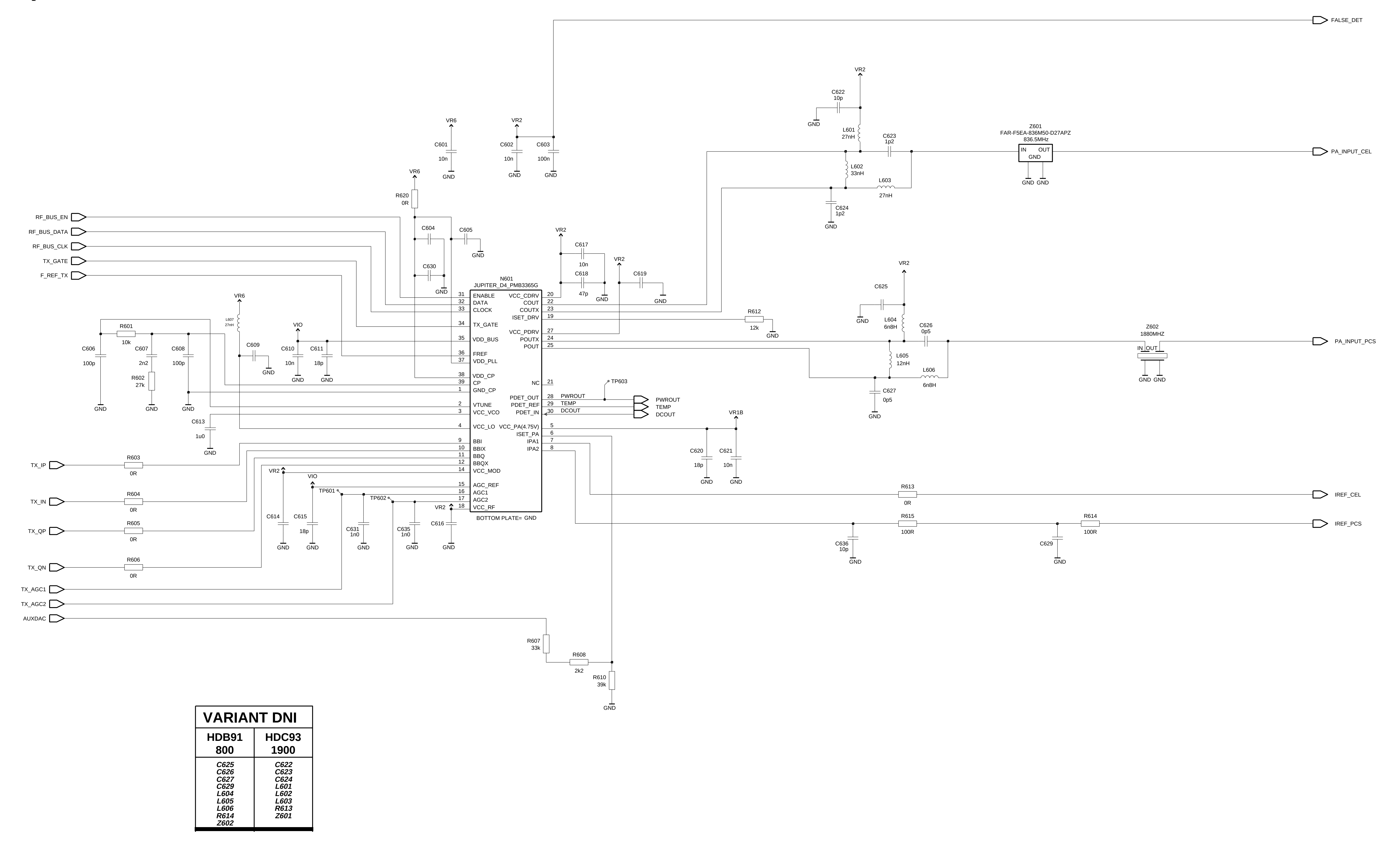


UPP8M V3.X			UPP8M V4.1		
CB0	CB1	Vout	CB0	CB1	Vout
0	1	1.35	0	0	1.05
1	1	1.57	0	1	1.35
INSTALLED R270 ONLY			INSTALLED R272 ONLY		

UPP

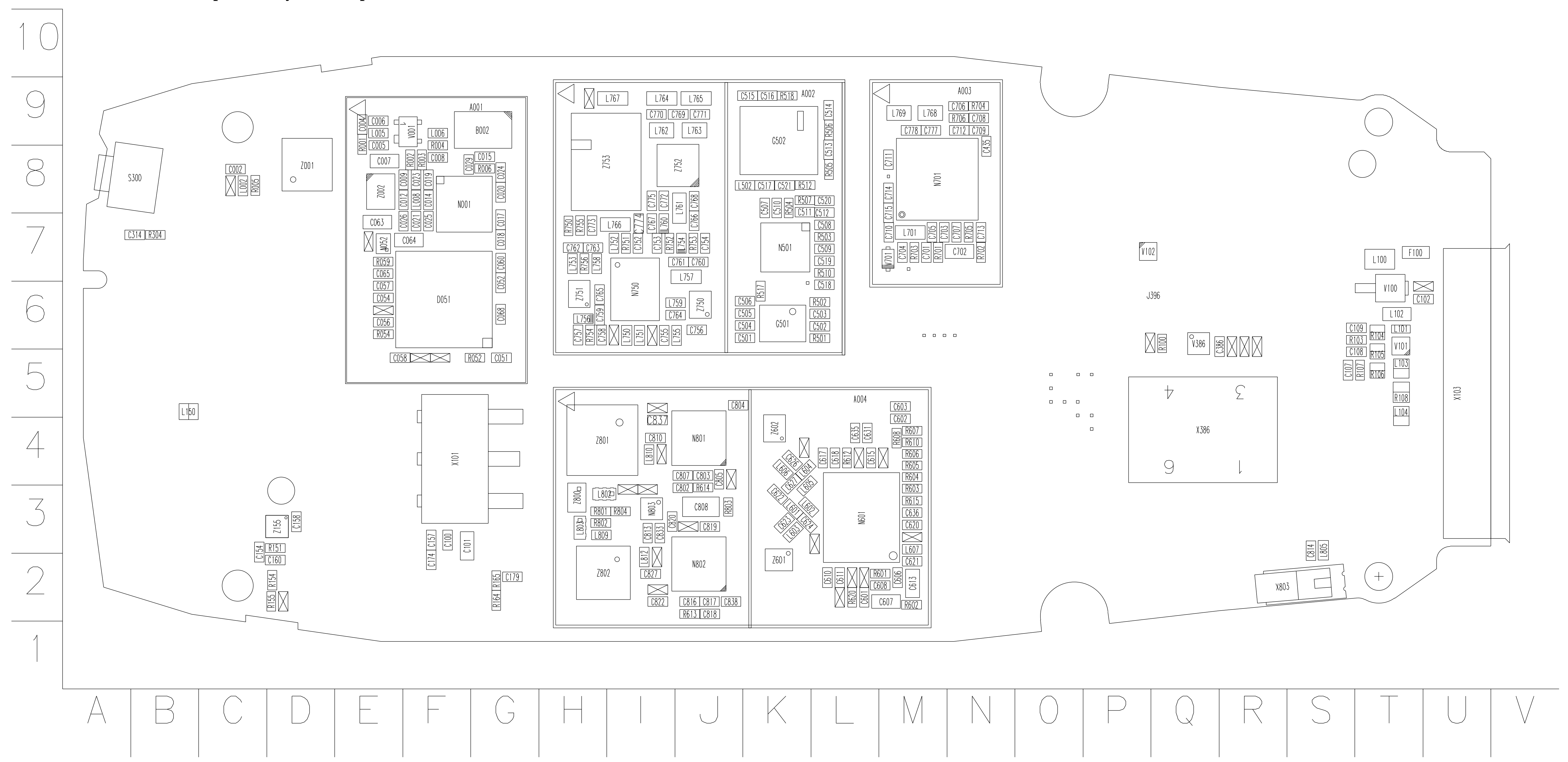

D400
UPP8M_V4.1E_PBFREE
JTAG_EMULATION(6:0)
DSP_MCUTEST(2:0)
GENIO(31:0)
MEMADDA(23:0)
MEMCONT(9:0)
PUSL(3:0)
AUDIODATA(1:0)
AUDUEMCTRL(3:0)
IACCDIF(5:0)
RFCONVCTRL(2:0)
RFCONVDA(5:0)
RFICCNTRL(2:0)
RFCLK
LCDUI(2:0)
KEYB(10:0)
Place caps near UPP
VCORE
VIO
GND
VDDDSP
VDDMCU
VDDCORE
VDDIO
VDDA
C400
C401
C402
C403
C404
C405
100n
EXTADDA 0:15
EXTAD 16:22

Jupiter

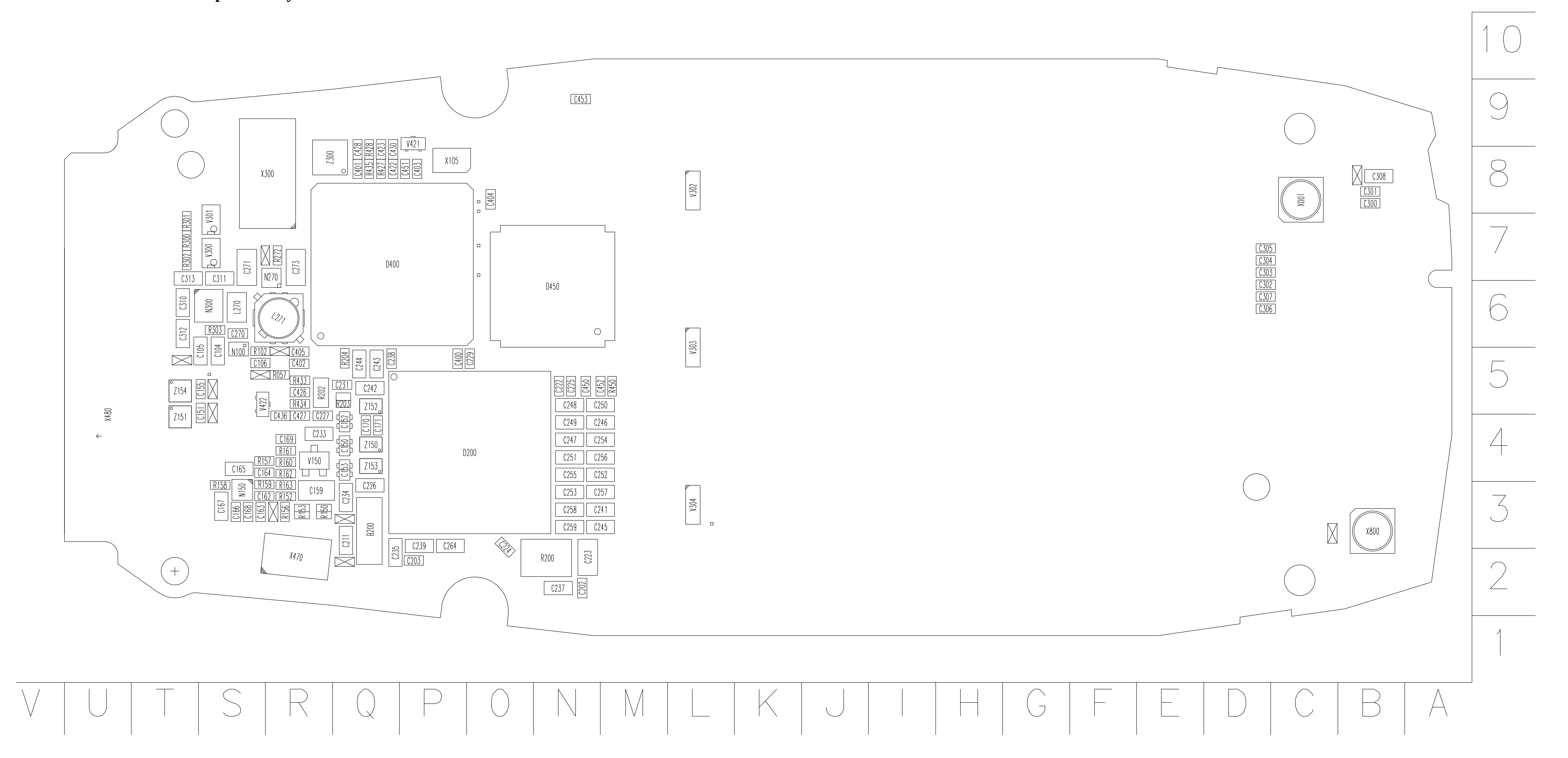


VARIANT DNI	
HDB91 800	HDC93 1900
C625	C622
C626	C623
C627	C624
C629	L601
L604	L602
L605	L603
L606	R613
R614	Z601
Z602	

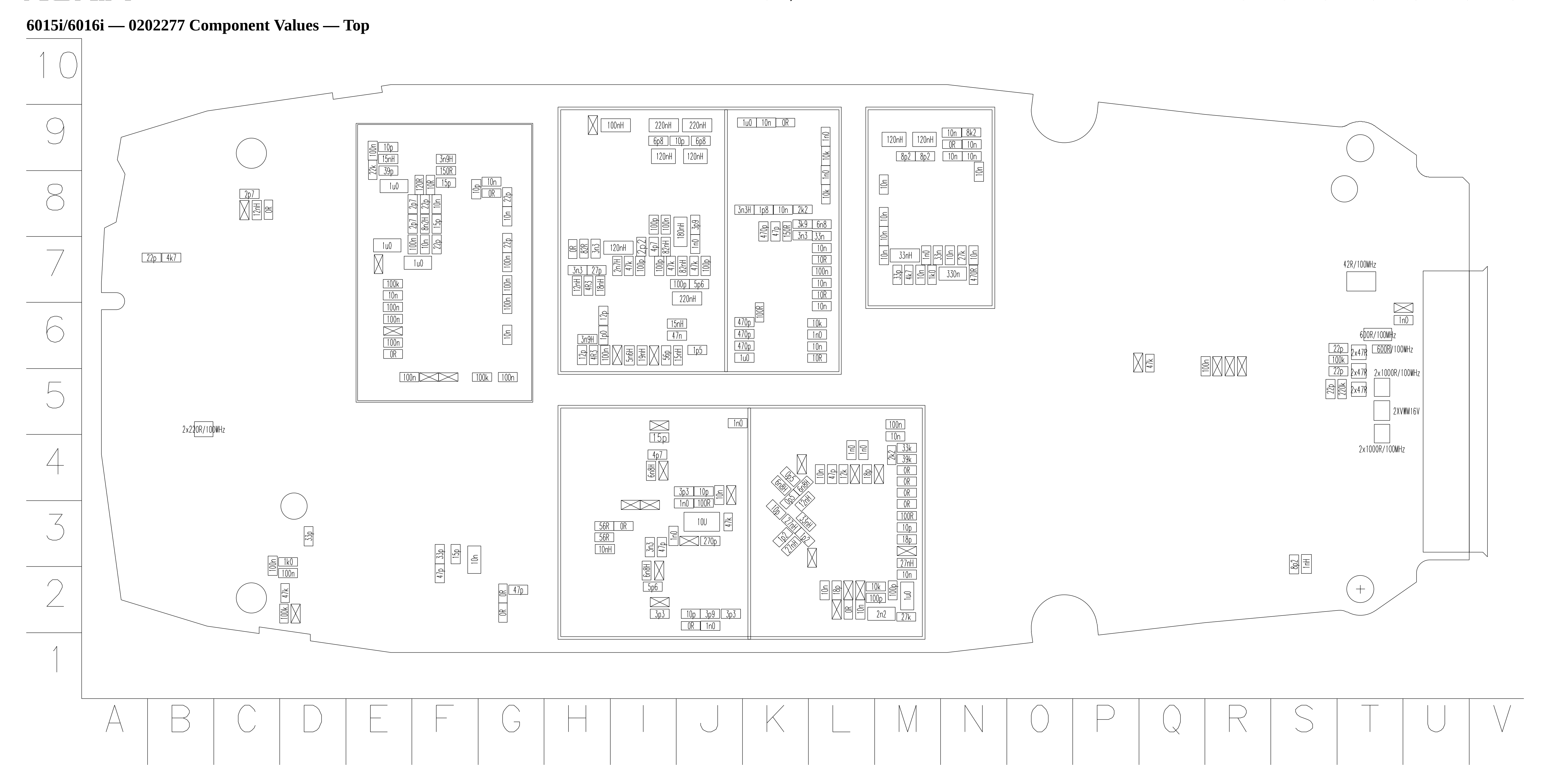
6015i/6016i — 0202277 Component Layout — Top



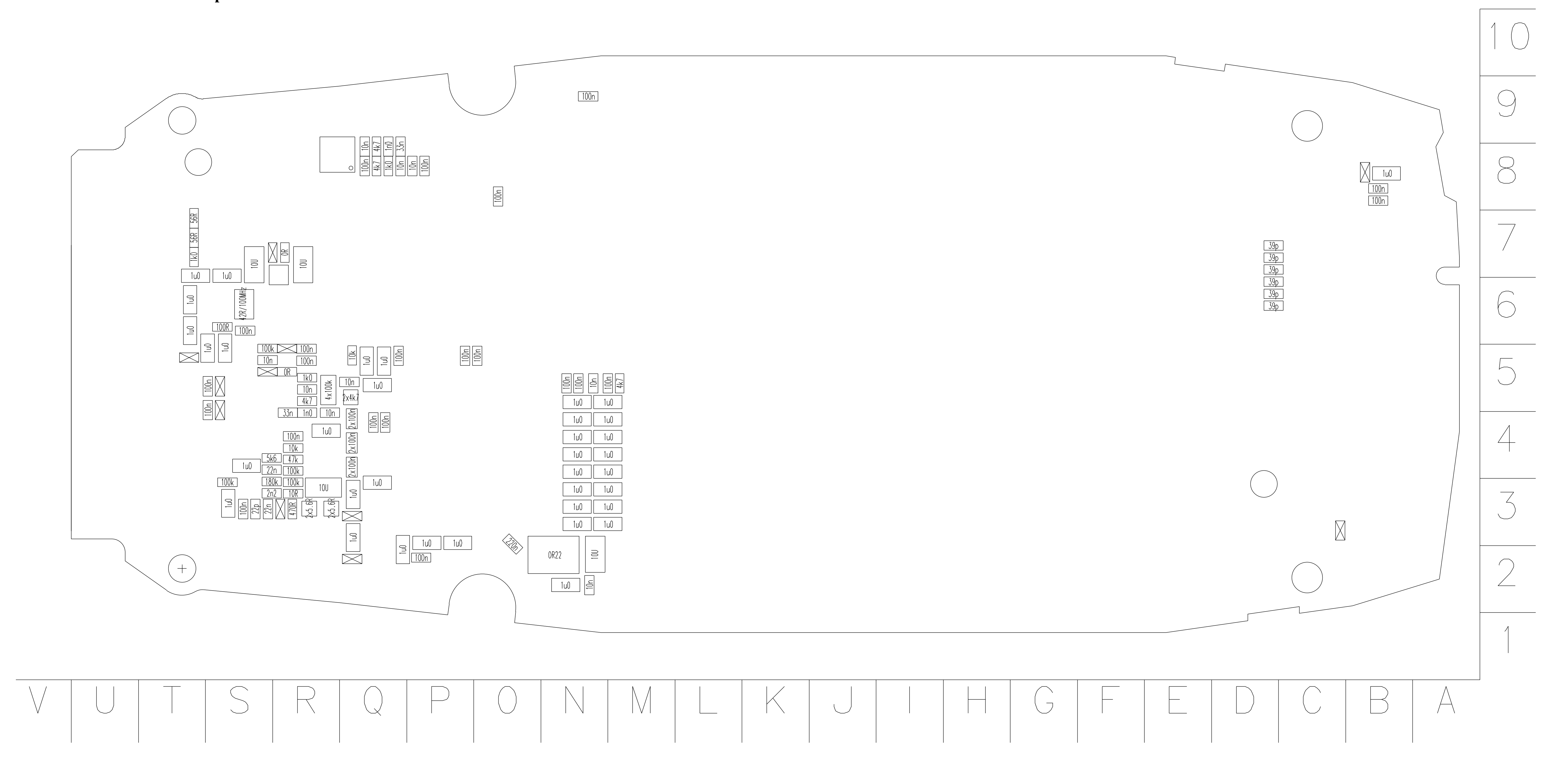
6015i/6016i — 0202277 Component Layout — Bottom



6015i/6016i — 0202277 Component Values — Top



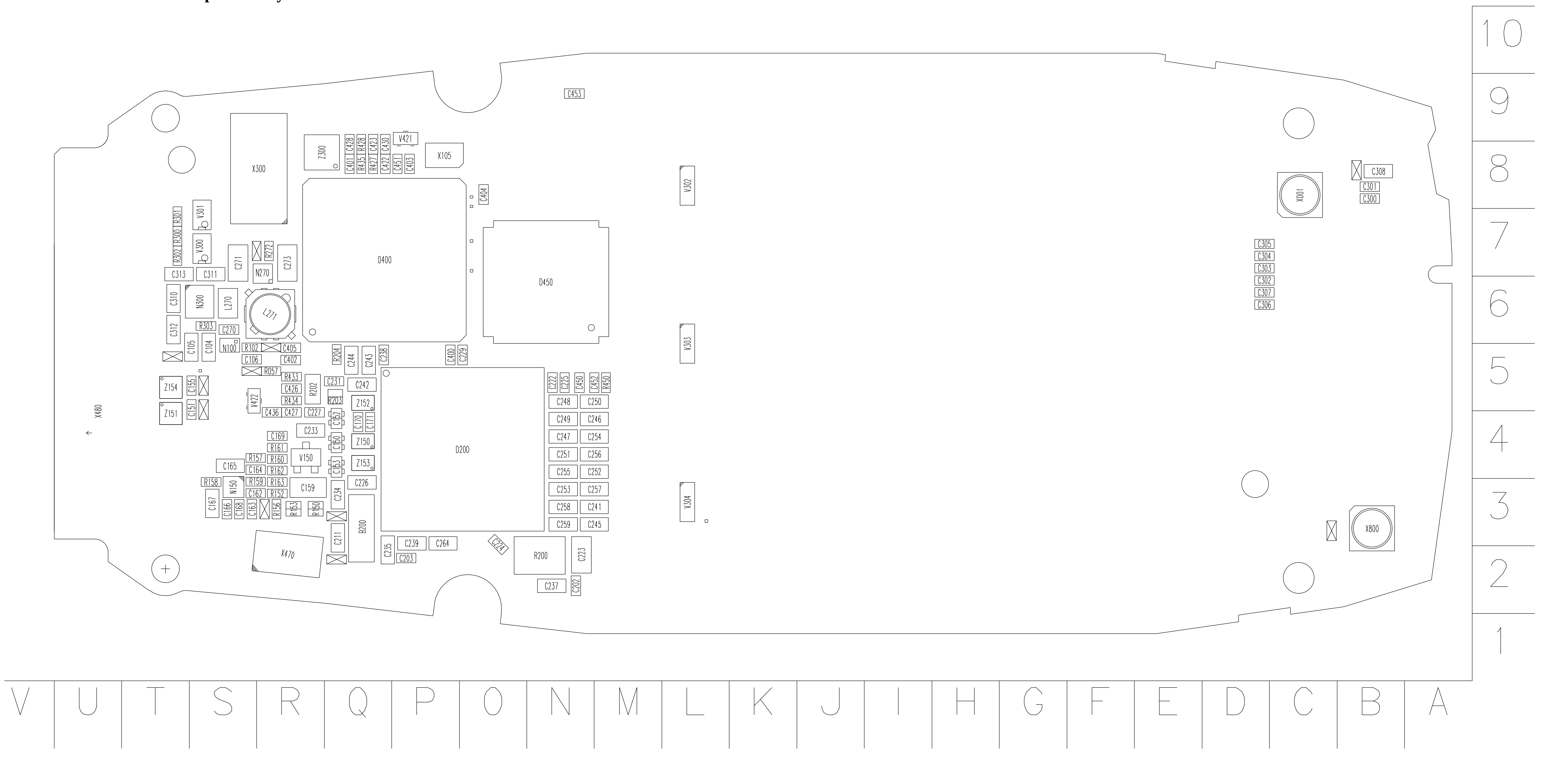
6015i/6016i — 0202277 Component Values — Bottom



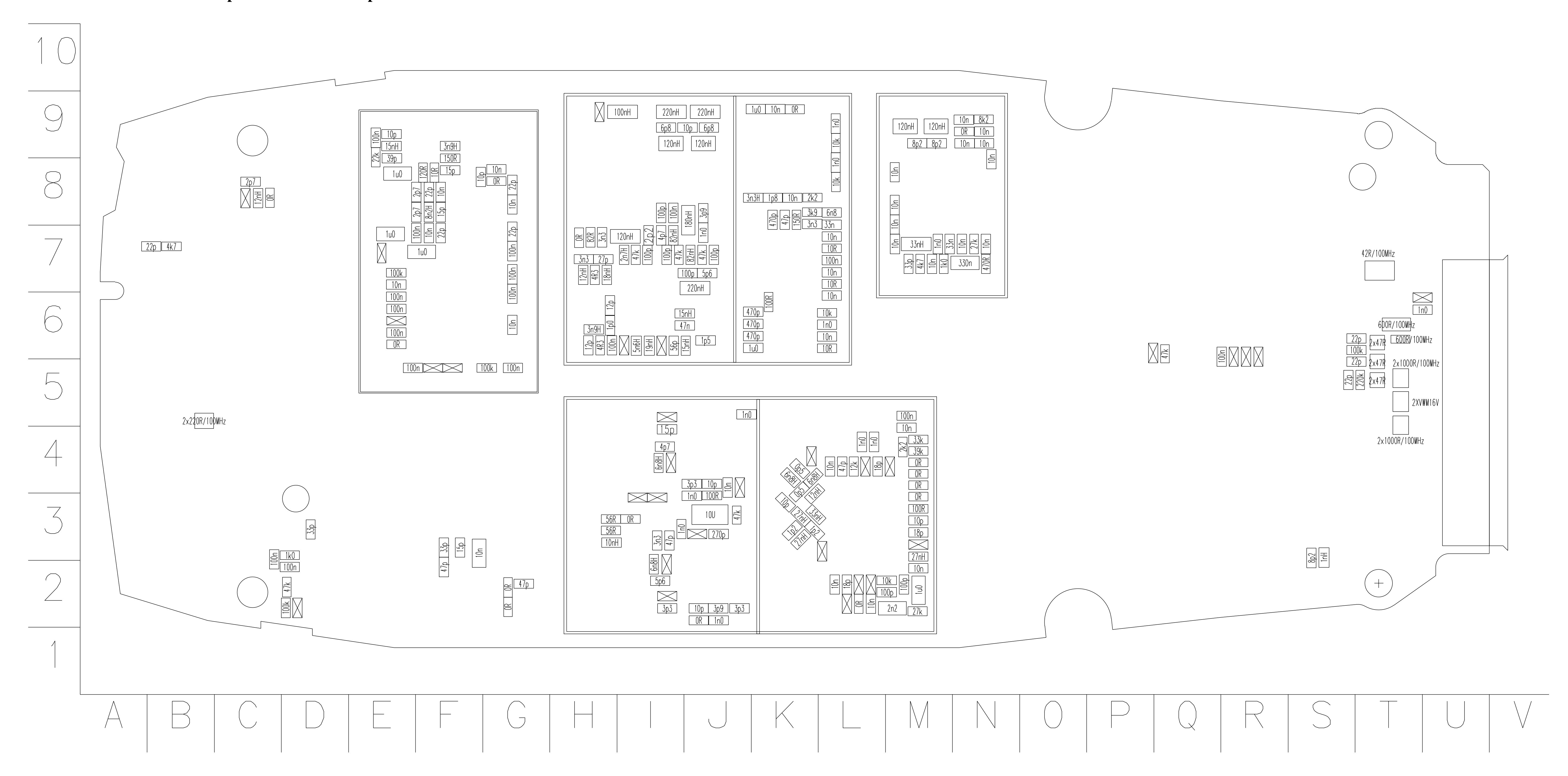
6015i/6016i — 0202398 Component Layout — Top



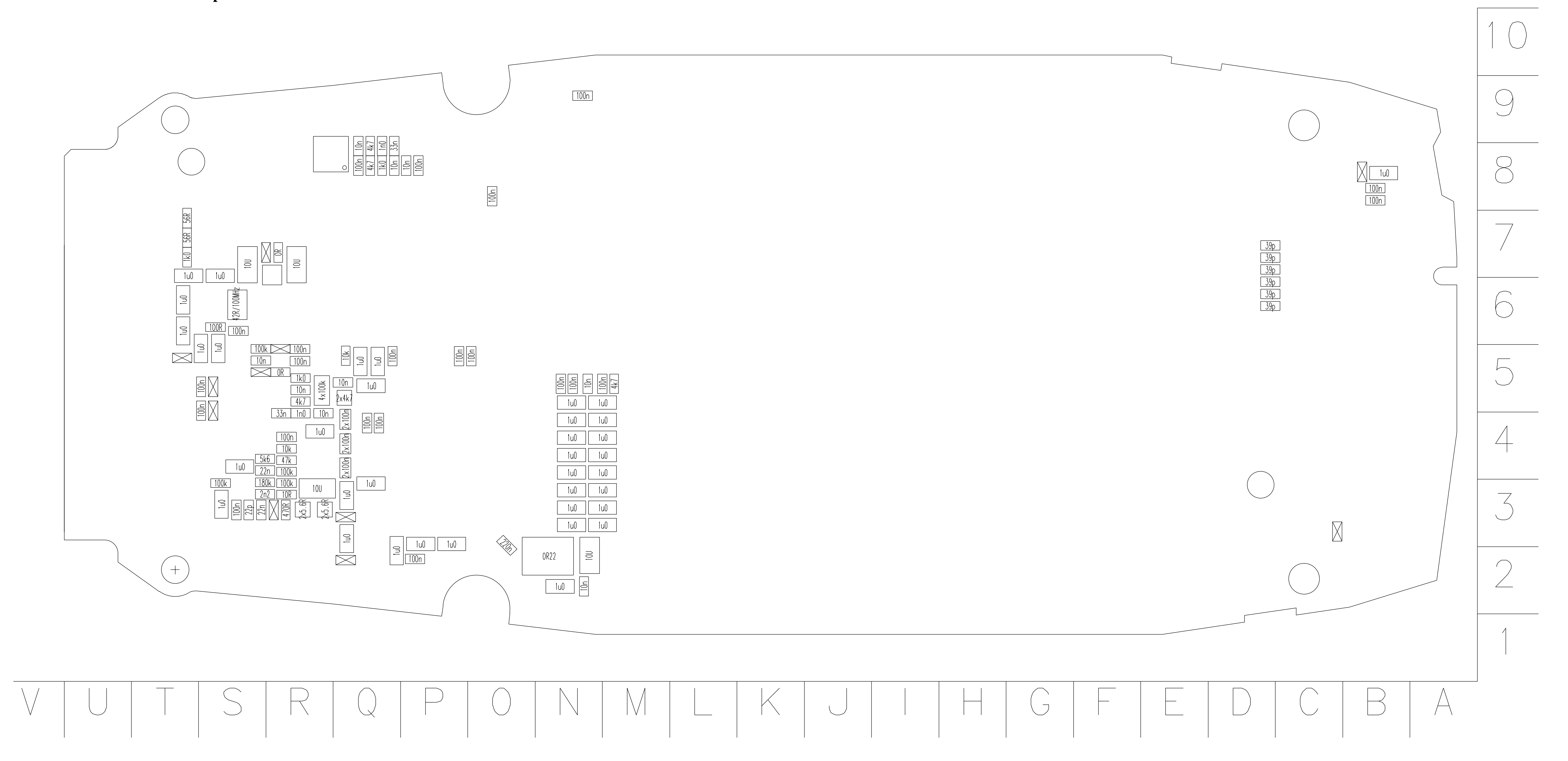
6015i/6016i — 0202398 Component Layout — Bottom



6015i/6016i — 0202398 Component Values — Top



6015i/6016i — 0202398 Component Values — Bottom



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